Investigating the Role of Demographic Factors on Social-Communication and Play Scores for Autistic Children Before Intervention

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Introduction

- Autism can impact everyday functioning through difficulties in social communication and interaction and restricted, repetitive behaviors (American Psychological Association, 2018).
- Autism interventions can target ways to improve cognition, language, and behavioral responses soon after diagnosis in order to strengthen daily living skills and social behavior as the child continues to grow (Dawson et al., 2009; Vivanti & Dissanayake, 2016).
- How do demographic factors such as parent education, parent income, and race moderate outcomes in social-communication and play skills?
- We anticipated that children with higher levels of parental education and income will have higher baseline scores compared to children with lower levels. We also anticipate that white children will receive higher baseline scores compared to children of other races.

Methods

Study Participants
- Recruited from public schools in Florida, North Carolina, Minnesota, Oregon, and Washington
- Students between the ages of 3 and 5 and classified as being on the autism spectrum
- 78 classroom teaching teams, 161 students

Measuring Social-Communication and Play Skills and Child Engagement
- Recorded observational instances of social interaction, requesting, and joint attention (responding and initiating).
- Scores were generated for groupings of these events, including increased scores for instances of advanced skills or combinations of functions.
- Data was collected at 3-4 time points across each school year for 4 years.

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Results

Table 3. One-Way ANOVA: Race and Social-Communication and Play Skills

One-Way ANOVA (Welch's)

	F	df1	df2	p
Social Interaction	2.805	2	19.45	0.085
Requesting	0.351	2	16.74	0.709
Joint Attention	8.708	2	30.14	0.001***
Social Communication Total Score	2.311	2	18.83	0.127
Joint Engagement Overall Engagement	1.025	2	7.49	0.404
Structured Play Assessment Total	3.338	2	24.33	0.052

* = p < .05, ** = p < .01, *** = p ≤ .001

Table 4. One-Way ANOVA: Income and Social-Communication and Play Skills

One-Way ANOVA (Welch's)

	F	df1	df2	p
Social Interaction	2.97	5	16.9	0.042*
Requesting	1.72	5	17.2	0.185
Joint Attention	2.45	5	19.2	0.071
Social Communication Total Score	5.15	5	18.7	0.004**
Joint Engagement Overall Engagement	NaN	5	NaN	NaN
Structured Play Assessment Total	4.35	5	23.2	0.006**

* = p < .05, ** = p < .01, *** = p ≤ .001
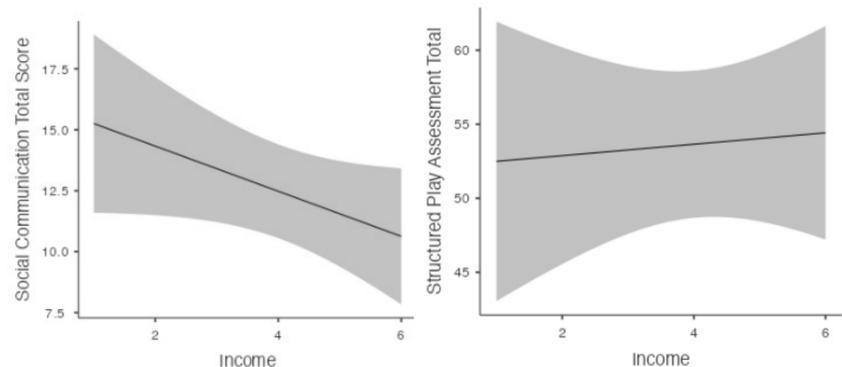
Supports Hypothesis
- Income & Structured Play Assessment Total Scores: As income increases, total score increases

Disproves Hypothesis
- Race & Joint Attention Scores: White children scored lower than children of other races
- Income & Social-Communication Scores: As income increases, total score decreases

Discussion

- Low-income families that face financial and career related stressors can face challenges acquiring resources to support their autistic child in adapting play skills (Sullivan & Stadtlander, 2020).
- Results of this study may not be generalizable because children are of the same age range and have been diagnosed for autism, which is not representative of access to resources and diagnosis in all racial groups (Remington et al., 2007).

Conclusion

- This study's findings may lead to further research on improving personalization of intervention strategies for each child's unique baseline scores and demographic traits.
- Results from these studies in public schools can help identify school districts and counties that need increased autism education and resources to improve diagnosis and treatment outcomes.
- Future research should be conducted on:
    - Individual randomization of participants rather than classroom randomization
    - Investigation of demographic moderators throughout intervention and following intervention

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